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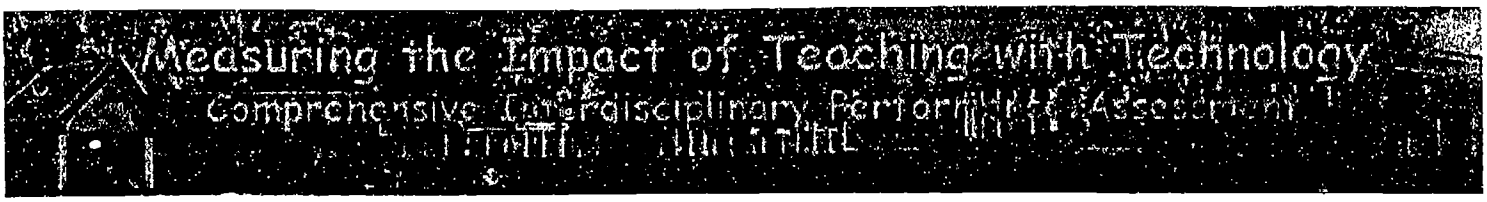
ABSTRACT

This paper discusses a pilot project in progress at Mantua Elementary School in Fairfax, Virginia begun on September 1, 1999 to develop, improve, and extend the school's current system of evaluating the effects of educational technology on student learning. The following sections are included: Purpose of the Project; Drawing upon the Concerns-Based Adoption Model (CBAM); Measuring Current Approaches to Teaching with Technology; For Teachers and Instructional Designers: An Annotated Bibliography on Teaching and Learning, Performance Assessment, and Technology; Brief Introduction to the Teacher Inventory (downloadable); Preliminary Findings; Teachers and Students Have Their Say: Video Narrative; Questions We Have Raised as We Enter Fall of 2000; Working with a National Panel in Year Two; Digital Ethnography: Introducing Innovations in Year Two; and Our Own Experiences Working with Students (a pilot project with materials for teachers to download). (MES)

The Process of an Evaluation in Progress.

Measuring the Impact of Teaching with Technology: Comprehensive Interdisciplinary Performance Assessment.

By: Walter Heinecke, Laura Blasi, and Sarah Skerker



The Process of an Evaluation in Progress

Mantua Elementary – "A Basic School Powered by Technology"

"We have all the standardized tests, and they give data that is necessary for an educator to look at and begin to develop an idea of possibly where that person might be or how they fair as to the standardized tests. But it doesn't really tell you who that child is. It doesn't really tell you what they have learned, and it doesn't give you feedback appropriately to know whether or not you are really making changes in your teaching style...."

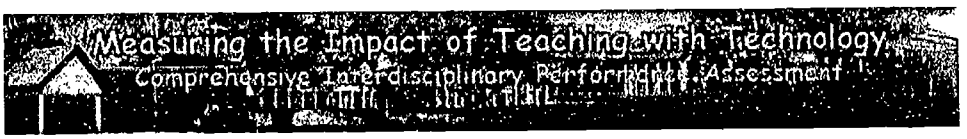
Sarah Skerker,
Mantua Distance Learning Center

- **Purpose of the Project**
- **Drawing upon the Concerns-Based Adoption Model (CBAM)**
- **Measuring Current Approaches to Teaching with Technology**
- **For Teachers and Instructional Designers:**
  An Annotated Bibliography on Teaching and Learning, Performance Assessment, and Technology
- **Brief Introduction to the Teacher Inventory** (downloadable)
- **Preliminary Findings**
- **Teachers and Students Have Their Say:**
  Video Narrative
- **Questions We Have Raised as We Enter Fall of 2000**
- **Working with a National Panel in Year Two**
- **Digital Ethnography:**
  Introducing Innovations in Year Two
- **Our Own Experiences Working With Students**
  (A pilot project with materials for teachers to download)

This site includes an overview of Mantua Elementary School's innovative programs integrating technology with teaching and learning. Here we offer our preliminary findings from spring, 2000, and our plan for fall of 2000. Supporting this paper is an annotated bibliography on performance assessment.

We also include video clips interwoven in a brief narrative. The clips allow the teachers and students at Mantua to speak for themselves. We also provide discussion clips for you to use within your own school.

Please download a copy of the teacher inventory created for the teachers at Mantua Elementary School, or examples of rubrics and planning materials we have developed with students in a pilot project. Final findings and materials will be available on this site in winter of 2000.



Purpose of the Project

Project was developed to assist the Office of Educational Technology (U.S. Department of Education) with the follow up to the Secretary's Conference on Evaluating the Effectiveness of Educational Technology. The research and development activities with Mantua Elementary school were proposed to extend the field's understanding of how to evaluate the impact of technology initiatives in school settings.

Dr. Walter Heinecke, Laura Blasi, Dave Keefe, and other graduate students began working with Mantua Elementary School in Fairfax, Virginia from September 1, 1999 in order to develop, improve, and extend the school's current system of evaluating the effects of educational technology on student learning. We are working with Mantua throughout fall of 2000 to review, revise, and expand their current performance assessment, the CIPA, in order to improve the validity and reliability of the assessment. This process includes field-testing new or improved evaluation tools in order to collect formative and summative information.

The results will include general procedures a school system or individual school could use to design tools to evaluate and assess the impact of technology on student learning. This will include documenting what Mantua personnel have completed to date and the associated findings.

Drawing upon the Concerns-Based Adoption Model (CBAM)

Following Hall and Hord's (1984) assertion that change is a process, not an event, we have drawn upon the Concerns-Based Adoption Model (CBAM) in our design for evaluating the implementation of technology at Mantua Elementary. "When a concerns-based approach is used," explain Hall and Hord, "change facilitators work in concert with teachers to address their emerging and evolving needs" (p. 15). Guided by CBAM, we have been documenting the participant points of view -- including those of change facilitators, and those of the users and nonusers of the school innovations. We are also documenting the following elements in our evaluation design at Mantua:

- Stages of Concern
- Levels of Use

- Levels of Use
- Innovation Configurations

Measuring Current Approaches to Teaching with Technology

Our task has been to measure the implementation and impact of current technology programs in place at Mantua. Throughout the spring of 2000, this evaluation has included their Comprehensive Interdisciplinary Performance Assessment (CIPA) and the One-to-One laptop program. After six months of observations and discussions at the school, we are working throughout fall of 2000 with teachers and administrators to further develop their current program. We are collaborating to extend the programs developed among sixth grade students to the other grades. With the teachers we are working to more closely tie the use of technology with specific content-related skills, beyond presentation skills. And we are conducting stakeholder interviews to better understand how participants envision the infusion of technology into content areas.

Preliminary Findings

Because of intense efforts at the 6th grade level, Mantua is moving forward and scaling the project up – throughout other grade levels. This year is an exciting year – with staff turnover and transitions ahead in school leadership, many of the administrators see the Comprehensive Interdisciplinary Performance Assessment (CIPA) as a door opening towards school reform.

The CIPA revisions seem to be sparking a curriculum realignment in which technology is contextualized within concern for content-related skills, applied in "real-world" simulations against the backdrop of the philosophy of Boyer's "Basic Schools". All involved with planning for fall 2000 supported the need for an emphasis on student collaboration. They also were in favor of an emphasis on group skills or "cooperative learning." Mantua will be participating in a Kagan Cooperative Learning workshop this fall.

In addition to the One-to-One laptop program, the Mantua Distance Learning Center offers many resources that are incorporated beyond CIPA (see video clip). The evaluation will need to take into account the laptop program and other resources – dovetailing instead of competing with other school efforts.

With so many media spotlights and with DOE attention, it is difficult for them to approach this without being confronted by: a) the responsibility for advancing the image of the school; b) the need to encourage the positive response of grant makers; and c) the duty

positive response of grant makers; and c) the duty school members have to help a new leader transition into a stable setting, while still keeping the momentum of the projects that sought to increase student learning within and beyond standardized testing.

Observations regarding students...

- Technology-usage was strongest in terms of presentation – students developed PowerPoint slides, showed short films they had made, and displayed their work on Web pages.

- Students are synthesizing and self-organizing as they take notes on their laptops; this technology provides more resources for "visual" learners as students use drawing programs to duplicate mathematical figures.

- Students are problem-solving and trouble-shooting by using the technology, even before they integrate the content.

- When they watched other students present in prior CIPA, they recalled only prompt-specific details and were not aware of skills or strategies that could transfer.

- While they had been using Avid Cinema, and other advanced technologies, when asked about how they used technology students thought of their laptops first and foremost.

- When asked content-specific questions (such as the math formula they had used in a calculation) students seemed to improvise rather than draw from prior class experience.

- Students could "talk the talk" regarding collaboration, but at times their actions contradicted their words.

Observations regarding teachers...

- Beyond learning new ways, sometimes teachers have to unlearn "old ways" – such as the use of index cards for note-taking when a keyboard is at hand.

- Teachers assert that the ways that they grade have not changed, despite the influx of technology, but they do note a change in student products.

- The laptop is praised for disguising fine motor skill problems and learning disabilities, as

skill problems and learning disabilities, as handwriting and spelling no longer indicate students have problems.

- The mechanisms in the technology (such as spell check) may be read as student editing skills, when in fact students are not self-correcting.

- They believe that the technology allows them to move through course materials faster; they no longer need to wait for student note-taking to keep up.

- They note that the artistic side of students, beyond what is expressed through type face needs to be acknowledged; despite such "professional looking" products the age level must be remembered.

Questions We Have Raised as We Enter Fall of 2000:

❖ How can formative assessment during the CIPA process provide teachers with needed information?

❖ How can we document that information so that it can follow a student and develop during their time at Mantua?

❖ How can student developed assessment (such as student-created rubrics) also help students learn self-discipline, planning skills, etc.?

❖ How do findings from CIPA complement SOL and other test measures?

❖ How does technology enhance content-related skills, beyond presentation?

Working with a National Panel

We are working with Mantua teachers as they develop content-specific CIPA prompts that integrate technology in fall, 2000. Once the prompts have been developed they will be reviewed by a panel of technology experts from the content related fields at schools of education across the country. While providing input to the teachers at Mantua, we will also be able to share a range of prompts that may be adapted to suit a range of school settings. The laptops continue to play an important role as we observe how the teachers goals for student literacy impact the way they use technology in their teaching. We intend to document, if possible, how this impact is -- or is not -- evident in the final student CIPA performance.

Digital Ethnography:

Digital Ethnography: Introducing Innovations in Year Two

We are also developing new programs with them, which include the use of student-developed digital ethnography, where students in grades 5 and 6 use digital video techniques in classrooms with younger students to record learning effects related to the use of technology in these classrooms..

Our Own Experiences Working With Students (A pilot project with materials for teachers to download)

Not only should change be experienced as a process, emphasize Hall and Hord (1984) "but the personal side of change as experienced by teachers is taken into account." In a meeting in September, 1999, teachers from Mantua discussed areas of possible improvement. They noted that towards the CIPA, their students need to learn several skills, including:

- How to manage time and plan
- Oral presentation skills
- Cooperative learning skills

Working with 7th and 8th grade students in the University of Virginia's Summer Enrichment Program, we tried several approaches to developing the skills needed in CIPA for this fall.

Our Challenge

The challenge we gave our students asked them to redesign k-8 education after they had researched Japanese education (an impossible task, but some of their insights were breathtaking). In the course of these sessions we encouraged students to distinguish between fact and opinion, while supporting their beliefs with evidence when appropriate.

Materials Developed with Students

Our efforts included the development of a rubric designed by students and a daily planning sheet, as well as a final rubric that allowed them to give confidential feedback about their group members. (We include the materials we developed with the students for you to use and adapt, examples are included). We worked with 48 students throughout the summer, dispersed over 3 ten-day-long sessions. We found that their peer evaluation often meant more to them than a grade or feedback from the instructor.

We also were able to develop a simple guide to using the Web for research based on our project focus that provided more structure for students who sought it. Throughout the three sessions we developed a journal with students that asked them to draw upon both

Internet resources (Web and e-mail) and video (a tape of a Japanese preschool), in addition to text-based resources (from books to magazines).

Encouraging Reflection

Students were also asked to refer to a "green sheet" of questions. Each day they began by responding to one of the questions, such as: "What is your role as a student?" "What do you know about education in Japan?" These questions served as prompts for the students, while recording their developing ideas.

Use of Resources

Specific materials were required -- all students had to read them and were encouraged to reference them in the final presentation. But students also had a number of text-based resources and Websites that they could choose to use. Materials were made available – but not required. In the way an adventurer might carry a supply list, student groups could check off what they had used in preparation and summarize key ideas as they went along. At the end of the two weeks, our course evaluation asked student to evaluate their own effort, and asked them to indicate which materials they had used.

Presentation Preparation

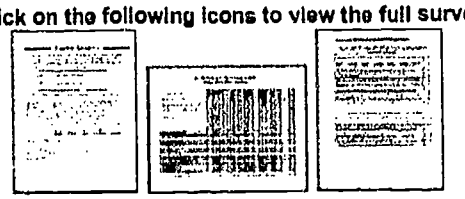
On the second week, students were required to give written feedback regarding the presentation styles of their peers in practice presentations, prior to the final presentation. On the final day, students were in charge of developing the agenda for the final presentation (an hour and a half including time for questions from the visiting panel). They presented to an external panel of experts, who then participated in a question and answer session with the students. In addition to presenting and responding to questions they were asked to take on a range of roles, including a "master of ceremonies" and a discussant who recapped the presentations.

Comparisons toward Differentiation

As the CIPA expands at Mantua, differentiation will be key to the success of the tasks encompassed by the challenge that students are given. Throughout this fall we will also be mindful of the ways that technology enhanced the educational possibilities for all students across the school. We will also note how our earliest explorations in evaluating can be adopted to meet the needs of CIPA.

Brief Introduction to the Teacher Inventory

(Click on the following icons to view the full survey)



We created this inventory to measure level of use of technology, as well as the teacher's self-perceived role as innovator, and his or her concerns regarding technology use in teaching. We wanted to record the teachers' own perceptions of their teaching style at the beginning of this year. With this goal in mind, the survey draws from the Center for Research on Information Technology and Organizations (CRITO)'s Teaching, Learning, and Computing Survey (1998).

Several of the questions in this survey draw from the stages of concern elaborated by Hall and Hord (1984, p. 60), including teacher concerns that are: related to the overall impact of innovations; related to their tasks involving the innovations; related to their personal concerns regarding the innovations; or unrelated to their school's innovations. We have asked the teachers to characterize the role of their change facilitators in terms of categories developed by Hall and Hord, aware that one person may display all of these characteristics to varying degrees. Several questions draw upon the innovation adopter categories described by Rogers in ***Diffusions of Innovations*** (1995, p. 263-266).

The Concerns-Based Adoption Model (CBAM): A Model for Change in Individuals

Reprinted with permission from the chapter entitled " Professional Development for Science Education: A Critical and Immediate Challenge," by Susan Loucks-Horsley. ***National Standards & the Science Curriculum****, edited by Rodger Bybee of the Biological Sciences Curriculum Study. Dubuque, Iowa: Kendall/Hunt Publishing Co., 1996. For more information call 1-800-KH-BOOKS (542-6657).*

Another framework that has implications for the *practices* of professional development acknowledges that learning brings change, and supporting people in change is critical for learning to "take hold." One model for change in individuals, the Concerns-Based Adoption Model, applies to anyone experiencing change, that is, policy makers, teachers, parents, students (Hall & Hord, 1987; Hord, Rutherford, Huling-Austin, & Hall, 1987; Loucks-Horsley & Stiegelbauer, 1991). The model (and other developmental models of its type) holds that people considering and experiencing change evolve in the kinds of questions they ask and in their use of whatever the change is. In general, early questions are more self-oriented: What is it? and How will it affect me? When these questions are resolved, questions emerge that are more task-oriented: How do I do it? How can I use these materials efficiently? How can I organize myself? and Why is it taking so much time? Finally, when self- and task concerns are largely resolved, the individual can focus on impact. Educators ask: Is this change working for students? and Is there something that will work even better?

The concerns model identifies and provides ways to assess seven stages of concern, which are displayed in Table 3. These stages have major implications for professional development. First, they point out the importance of attending to where people are and addressing the questions they are asking when they are asking them. Often, we get to the how-to-do-it before addressing self-concerns. We want to focus on student learning before teachers are comfortable with the materials and strategies. The kinds and content of professional- development opportunities can be informed by ongoing monitoring of the concerns of teachers. Second, this model suggests the importance of paying attention to implementation for several years, because it takes at least three years for early concerns to be resolved and later ones to emerge. We know that teachers need to have their self-concerns addressed before they are ready to attend hands-on workshops. We know that management concerns can last at least a year, especially when teachers are implementing a school year's worth of new curricula and also when new approaches to teaching require practice and each topic brings new surprises. We also know that help over time is necessary to work the kinks out and then to reinforce good teaching once use of the new practice smoothes out. Finally, with all the demands on teachers, it is often the case that once their practice becomes routine, they never have the time and space to focus on whether and in what ways students are learning. This often requires some organizational priority setting, as well as stimulating interest and concern about specific student learning outcomes. We also know that everyone has concerns-for example, administrators, parents, policy makers, professional developers-and that acknowledging these concerns and addressing them are critical to progress in a reform effort.

Professional developers who know and use the concerns model design

experiences for educators that are sensitive to the questions they are asking when they are asking them. Learning experiences evolve over time, take place in different settings, rely on varying degrees of external expertise, and change with participant needs. Learning experiences for different role groups vary in who provides them, what information they share, and how they are asked to engage. For instance, addressing parents' and policy makers' question "How will it affect me?" obviously will look different. The strength of the concerns model is in its reminder to pay attention to individuals and their various needs for information, assistance, and moral support.

Traditionally, those who provided professional development to teachers were considered to be trainers. Now, their roles have broadened immensely. Like teachers in science classrooms, they have to be facilitators, assessors, resource brokers, mediators of learning, designers, and coaches, in addition to being trainers when appropriate. Practitioners of professional development, often teachers themselves, have a new and wider variety of *practices* to choose from in meeting the challenging learning needs of educators in today's science reform efforts.

Typical Expressions of Concern about an Innovation/ Table 3.

Stage of Concern	Expression of Concern
6. Refocusing	I have some ideas about something that would work even better.
5. Collaboration	How can I relate what I am doing to what others are doing?
4. Consequence	How is my use affecting learners? How can I refine it to have more impact?
3. Management	I seem to be spending all my time getting materials ready.
2. Personal	How will using it affect me?
1. Informational	I would like to know more about it.
0. Awareness	I am not concerned about it.

Levels of Use of the Innovation: Typical Behaviors

Levels of Use	Behavioral Indicators of Level
VI. Renewal	The user is seeking more effective alternatives to the established use of the innovation.
	The user is making deliberate efforts to

V. Integration	coordinate with others in using the innovation.
IVB. Refinement	The user is making changes to increase outcomes.
IVA. Routine	The user is making few or no changes and has an established pattern of use.
III. Mechanical	The user is making changes to better organize use of the innovation.
II. Preparation	The user has definite plans to begin using the innovation.
0I. Orientation	The user is taking the initiative to learn more about the innovation.
0 . Non-Use	The user has no interest, is taking no action.

From *Taking Charge of Change* by Shirley M. Hord, William L. Rutherford, Leslie Huling-Austin, and Gene E. Hall, 1987. Published by the Association for Supervision and Curriculum Development (703) 549-9110 Reprinted with permission.

CIPA

A Comprehensive Interdisciplinary Performance Assessment

(This description was written by faculty at Mantua Elementary School)

What is a CIPA?

A CIPA is an assessment tool designed to test the effectiveness of The Basic School's interdisciplinary approach to instruction with the integration of technology in the curriculum.

Why was the CIPA created?

Because there was no assessment component to substantiate or refute the Basic School claims in contrast with the data available from the E.D. Hirsch factual/ drill approach, Mantua developed the CIPA to address the need for assessment specifically in the context of the Mantua integrated curriculum.

How was the CIPA developed?

From the beginning of our "journey", *Mantua: A Basic School Powered by Technology*, asserted that when children are exposed to interdisciplinary units powered by technology, they become literate, cooperative, problem-solving, self-motivated learners, but the problem was proving it.

Dr. Boyer had not developed an assessment model for The Basic School prior to his death, so Mantua was on its own. A committee, composed of Mantua's administrators and two teachers, met with Dr. Mary Ellen Bafumo (Director of the Basic School Network), Dr. Gloria McDonell (Director of Elementary Instruction for FCPS), Mr. James VanDien (Office of Program Evaluation, FCPS) over a two-week period to create an appropriate test. This device needed to evaluate our sixth grade students' abilities to be independent learners and problem solvers while demonstrating an integration of technology with language, mathematics and the arts. Since traditional methods of assessment (multiple choice, fill in the blank, essay, and true/false tests) could not measure this, the CIPA was born.

What are the components of a CIPA?

There are eight distinct steps in creating, administering and evaluating a CIPA.

1. Planning the CIPA content for fourth and sixth grades in the fall of the year by a team of interested individuals.

2. The CIPA would be administered in the spring of the year. The problem would be introduced on DAY ONE to the whole group as a real world scenario, designed to generate student interest and enthusiasm.

3. Students would be given an extended period of time to independently brainstorm a plan of action. This time is critical, for while we want students to solve problems in groups, we also want to evaluate individual student initial ability to problem solve. The brainstorming time could vary from an hour, to a half day. Initial plans would be kept by students and would be submitted for evaluation.

4. Cooperative groups of 4-6 would be formed in advance by the classroom teachers. These groups would include students with a cross-section of abilities and talents. As these groups are announced on DAY ONE, an adult volunteer would be assigned. In a perfect world, each group would keep the same volunteer for the duration of the assessment. Failing that, adults would be recruited by the day. These volunteers would be trained in advance by the staff to keep conditions as standard as possible throughout the groups. The remainder of DAY ONE would be spent sharing initial plans and forming a process plan of action to design an answer to the question and create a presentation of that plan.

   Each volunteer would be responsible for listening to and recording ideas, suggestions, and progress of his/her group on a provided eMate, using Learner Profile. Volunteers would be responsible for transporting students to community sites, if needed, to obtain critical information. Volunteers would also be able to answer direct questions posed by the group ONLY when the group is at a standstill due to lack of life experience. Volunteers would NOT give suggestions for process, trips, or speakers, and would not be the motivators of the group. Their role would be that of passive "fly on the wall."

5. On DAY TWO through DAY EIGHT students would spend each entire school day gathering information. Students would be expected to use resources such as the Internet, school library resources, public library resources, and information gained from experts during field trips to local sites and on the phone.

6. On DAY NINE, the presentations of solutions would take place. Each group would present before a panel of adults who would evaluate the project according to set standards. Presentations would be evaluated according to:

   - interdisciplinary inclusion of subject areas and the arts
   - group cooperation
   - problem-solving ability
   - use and integration of technology in the final product

7. All projects would be shared with the community at a SIXTH GRADE CELEBRATION OF LEARNING one evening where parents and community members would be invited to hear groups speak about their solutions to the problem.

8. Teachers would confer with each student and his/her parents prior to the end of the year. This conference would be designed to inform the parent and student of individual contributions made to the group project. It would serve as an oral summary of the elementary school experience at Mantua.

Would students be graded on the CIPA?

No. The CIPA is designed to be a culmination of group process and product learning and not a test of individual knowledge. Local businesses have told us that graduates are not able to tackle and solve a problem in a group, and we want our students to be able to have those skills early in life. Knowledge of subjects taught during the year will be evaluated in traditional methods in the classroom.

When do we have to administer the first CIPA?

The first CIPA, our test run, will be administered during the spring of 1999 to fourth (one week shortened version) and sixth grade students. An evaluation of results will take place prior to the development of the next year's test. The first officially recorded CIPA is scheduled for the spring of 2000.

What skills need to be taught, beginning in kindergarten, for sixth grade students to successfully complete a CIPA?

- Cooperative group work must be done often in every classroom in the school.
- Student should be given many opportunities for class discussions about a variety of subjects.
- Whenever possible, students need to be asked to develop a process rather than just a product.
- Higher level thinking skills should be taught and questioning during discussions should come from the high levels to stretch student brains.
- Choices must be offered to students and students should be allowed to determine their own standards and products.
- Students need to be encouraged to stretch and be different.
- Strong academic skills must be in place for a CIPA to work.
- By sixth grade, each student should be able to
  - read and analyze information from a variety of sources
  - write intelligently in many styles
  - use a computer to make spreadsheets
  - organize databases
  - create slide shows
  - use search engines
  - select valuable sites
  - word process documents

1999 CIPA

You and your group members are employees of a Think Tank, which is known for its ability to be creative, original and thorough. Because of that reputation, your group has been asked to create a new trip for a travel agency. The agency wants you to use your knowledge of our country and its contributions to design a trip for first-time visitors from a foreign land. The proposed trip title and brief description are below.

"What Are Americans All About?" or "The Culture of America"
A two to three week tour of the United States during which first-time visitors (adults of varying ages and children over eight) learn about the contributions, history, values, and goals of Americans. Included in the price of the tour is round-trip airfare from London or Paris or Rome, nightly hotel accommodations, entrance prices into all sites, ground or air transportation between cities, and breakfast and lunch each day.

The tour company needs a trip itinerary, which clearly details a day-to-day run down of routes, sites to be visited, hotels and meals. They require a cost breakdown, and a final price, per person for the trip (based on two people from the same family staying in the same room each night). For the tour to be appealing to the public, they suggest that the total price per person not exceed $4,000. Each tour group will contain no more than 48 people.

You must:

a. determine who Americans are, what sites would help visitors to learn about the history of the country, what contributions have been made by Americans that can be shown, and decide what the general values and goals of Americans are
b. determine a route and method of travel while in the U.S.
c. designate stops for sight seeing, including what will be learned at each site, places to eat, and overnight stays-the more details the better
d. have the trip last 14 days (leave home on day 1, return on day 14)
e. determine a per person rate for the trip
f. calculate a 10% discount for the "land portion" of tours (everything except airfare) for children under 17
g. keep a complete log of your resources (calls, interviews, books, magazines, Internet sources)

Your presentation to the agency is **due on** _____ . It should include attractive displays of information and a clear justification for your choices. Each presentation has been limited to 30 minutes. Remember that your presentation will be a sales job. The agency will be looking for attention to requirements and details, and an ability to be creative and original and have a professional attitude. The winning firm will receive hefty cash bonuses in their year-end checks.

Final presentation ideas:
Charts, graphs, posters, brochures, spreadsheets, original videos, graphics, pictures, photographs, and multimedia presentations such as HyperStudio, mPower, Claris slide show, Avid Cinema are among some of your options.

Hint: A combination of many types of media makes a presentation much more interesting. Remember that people in an audience often like having a handout to refer to while watching a larger presentation.

1999 CIPA

You and your group members are employees of a Think Tank, which is known for its ability to be creative, original and thorough. Because of that reputation, your group has been asked to create a new trip for a travel agency. The agency wants you to use your knowledge of the development of Western Civilization to design a trip for first-time visitors from the United States. The proposed trip title and brief description are below.

"America's European Roots"
A two or three week tour of Europe during which American visitors (adults of varying ages and children over eight) will learn about Western Civilization and its impact on the development of American culture. Included in the price of the tour is round-trip airfare from either Dulles, Reagan International or BWI Airport to your first city of interest, nightly hotel accommodations, entrance prices into all sites, ground or air transportation between cities, and breakfast and dinner each day.

The tour company needs a trip itinerary, which clearly details a day-to-day run down of routes, sites to be visited, hotels and meals. They require a cost breakdown, and a final price, per person for the trip (based on two people from the same family staying in the same room each night). For the tour to be appealing to the public, they suggest that the total price per person not exceed $4,000. Each tour group will contain no more than 48 people.

You must:

a. decide which events in the history of Western Civilization shaped American culture and which sites would help visitors to learn about this development
b. determine a route and method of travel while abroad
c. designate stops for sight seeing, including what will be learned at each site, and overnight stays-the more details the better
d. have the trip last 14 days (leave home on day 1, return on day 14)
e. determine a per person rate for the trip
f. calculate a 107o discount for the "land portion" of tours (everything except airfare) for children under 17
g. keep a complete log of your resources (calls, interviews, books, magazines, Internet sources)

Your presentation to the agency is due on _____ . It should include attractive displays of information and a clear justification for your choices. Each presentation has been limited to 30 minutes. Remember that your presentation will be a sales job. The agency will be looking for attention to requirements and details, and an ability to be creative and original and have a professional attitude. The winning firm will receive hefty cash bonuses in their year-end checks.

Final presentation ideas may include:
Charts, graphs, posters, brochures, spreadsheets, original videos, graphics, pictures, photographs, and multimedia presentations such as HyperStudio, mPower, Claris slide show, Avid Cinema are among some of your options.

Hint: A combination of many types of media makes a presentation much more interesting. Remember that people in an audience often like having a handout to refer to while watching a larger presentation.

Rubric for Evaluation CIPA Presentations

	Beginning	Developing	Accomplished	Exemplary	Score
Overall Aesthetics					
Overall visual appeal of final project	0 points No visual elements.	1 point Few visual elements. OR Text difficult to read.	2 points Two or three different media used.	3 points Appealing visual elements are included appropriately. Various media used including pictures, photographs and downloaded images, slide shows, films, hard copies.	
Introduction					
Motivational effective of Introduction	0 points No introduction.	1 point Introduction was purely factual with no appeal to audience.	2 points Introduction related somewhat to the audience's interests and/or described the problem.	3 points The Introduction drew the audience in by relating the problem in an interesting/creative/ original way.	
Task					
Cognitive level of the task	0 points Presentation showed no comprehension of material.	3 points Presentation showed simple comprehension of material.	6 points Task showed analysis of information and/or putting together information from several sources.	9 points Task showed synthesis of multiple sources of information, and/or taking a position, and/or going beyond the data given and making a creative and original product.	
Process					
Richness of process of presentation	0 points Disorganized, not planned	1 point Traditional speech presentation.	3 points All group members presented some variety in presentation.	6 points Lots of variety in presentation. Many different components presented (computer, video, hard copy).	
Resources					
Quantity of resources	0 points No resources used.	1 point Few online and library resources used. (1-2)	2 points Moderate number of online and library resources used. (3-4)	3 points Many resources provided including online, library and personal interviews. (5+)	
Quality of resources	1 point Could be found in a school library.	2 points Information not ordinarily found in a school was used, but was all from books.	3 points Information used from travel books, trip brochures, and interviews, but was all from books.	4 points Excellent use of the Web's timeliness and including books, brochures, interviews and visits.	
TOTAL SCORE					

Oral Presentation Rubric

Your name: _____

Group Members: _____

Oral Presentation Rubric	Possible Points	Self-Assessment
Provided depth in coverage of topic.	10	
Presentation was well planned and coherent.	10	
Explanation and reasons were given for decisions.	10	
Communication aids were clear and useful.	10	
Handout was useful for others interested in topic.	10	
Bibliographic information for others was complete.	10	
Total Possible Points	60	

Rate each category according to the following scale:

9 - 10 = excellent
7 - 8 = very good
5 - 6 = good
3 - 4 = satisfactory
1 - 2 = poor
0 = unsatisfactory

Oral Presentation Rubric

Your name: _____

Group Members: _____

Oral Presentation Rubric	Possible Points	Committee Assessment
Provided depth in coverage of topic.	10	
Presentation was well planned and coherent.	10	
Explanation and reasons were given for decisions.	10	
Communication aids were clear and useful.	10	
Handout was useful for others interested in topic.	10	
Bibliographic information for others was complete.	10	
Total Possible Points	60	

Rate each category according to the following scale:

9 - 10 = excellent
7 - 8 = very good
5 - 6 = good
3 - 4 = satisfactory
1 - 2 = poor
0 = unsatisfactory

Daily Collaboration Rubric

	Beginning	Developing	Accomplished	Exemplary
Contribute				
Research & Gather Information	Did not collect any information that related to the topic.	Collected very little information—some related to the topic	Collected some basic information - most related to the topic	Collected a great deal of information—all related to the topic.
Share Information	Did not relay any information to teammates	Relayed very little information - some related to the topic.	Relayed some basic information - most related to the topic.	Relayed a great deal of information - all related to the topic.
Take Responsibility				
Fulfill Team Role's Duties	Did not perform any duties of assigned team role.	Performed very little duties.	Performed nearly all duties.	Performed all duties of assigned team role.
Share Equally	Always relied on others to do the work.	Rarely did the assigned work—often needed reminding.	Usually did the assigned work - rarely needed reminding.	Always did the assigned work without having to be reminded.
Value Others' Viewpoints				
Listen to Other Teammates	Always talked—never allowed anyone else to speak.	Usually did most of the talking—rarely allowed others to speak.	Listened, but sometimes talked too much.	Listened and spoke a fair amount.
Cooperate With Teammates	Usually argued with teammates.	Sometimes argued.	Rarely argued.	Never argued with teammates.
Make Fair Decisions	Usually wanted to have things their way.	Often sided with friends instead of considering all views	Usually considered all views.	Always helped team to reach a fair decision.

Basic School Evaluation Component

Group # _____

Members _____

Integrated use of:

Mathematics

	Laptop	multimedia computer	calculator	paper
spreadsheets				
averages				
cost totals				
currency conversion				
accuracy				

Language

_____Coherent written work
_____Proofreading
_____Editing
_____Effective oral communication

Art

_____Visits to museum
_____Balance/color/aesthetics of presentation considered
_____Important works of art included in presentation
_____As reference source

Music

_____Concerts (included in tour)
_____As reference source
_____Included in presentation
_____Soundtrack

Drama

_____Plays (included in tour)
_____Theater in London
_____Dramatic elements used in presentation

Dance/Movement

_____Dance
_____Movement included in presentation

Technology used in preparation

Computer (indicate Laptop or Multimedia

_____notes
_____spreadsheets
_____currency conversions
_____time zones

Skills Observed:

_____download information from web
_____import pictures
_____design web page
_____take and use video
_____take/use digital pictures

Software used:

_____Internet Explore/Netscape
_____Claris word processing /
s preadsheet/database
_____mPower
_____HyperStudio
_____Kid Pix Slide Show
_____Avid Pix Slide Show
_____Avid Cinema
_____Arc View
_____Web Page Makers
_____DVDs
_____CDs
_____Other

Hardware used:

_____Multimedia computer
_____Videoconferencing
_____CCTV
_____Smartboard
_____Scanner Digital Camera
_____Video Camera
_____Document Cameras
_____Copy Machine

Primary Source information

_____Phone contact
_____Personal interviews
_____field trip
_____Internet
_____newspaper
_____other (specify)

Climate for Learning

_____Group member shows excitement for learning

Group dynamics
_____designates roles
_____plans jobs/tasks
_____communicates expectations of members
Flexible grouping
_____matches individual strengths with task

Other observations:

Commitment to Character

Group shows:

Respect
___for members for parents
___Adults on field trips
___during phone calls

Compassion
___for members who are ill/suffering with allergies
___for members who run into problems
___for others who run into problems

Caring
___for members who experience problems
___for others who experience problems

Giving
___for members who need help
___for others who need help

Honesty
___in log-keeping
___during daily evaluations and discussions

Responsibility
___for task completion
___for organization of material
___for being in correct location (not wandering

Perseverance
___when task get complex
___when information is difficult to locate

The Mantua Distance Learning Center at Mantua Elementary: A Basic School Powered by Technology (This description was written by faculty at Mantua Elementary School)

At Mantua Elementary-Mantua Center, we are committed to extending educational experiences beyond the classroom and to creating a distributed learning environment that facilitates the active participation of all students and teachers in the learning process. Our newest classroom, the Mantua Distance Learning Center, opened in December 1998. It features state-of-the-art videoconferencing, video production, and computer equipment to provide flexible teaching and learning environments that accommodate different learning styles and individual learning paces. Believing that it is a powerful instrument in the efforts to break down barriers to education and improve the quality and availability of education to everyone, the students and teachers of Mantua are prepared to pioneer the use of two-way, interactive distance learning within elementary education.

The Mantua Distance Learning Center is supported by two grants from Bell Atlantic-Virginia totaling $120,000. The Center integrates four educational technologies:

- real-time videoconferencing;
- closed-circuit TV;
- video production; and,
- interactive computer instruction.

We have been able to successfully integrate these educational technologies with art, language arts, social and physical sciences, history, and mathematics by focusing on the connections across academic disciplines. Within this paradigm, technology is not an end to itself, but rather the transparent set of tools that facilitates discovery and visualization of ideas.

Recognition of Need:
Mantua Center: Our Profoundly Deaf Population

Interactive distance learning addresses the learning needs of students at all levels of academic and language ability. It is especially useful, however, to the Deaf community. Interactive distance learning through videoconferencing provides access for individuals using American Sign Language to communicate and share ideas. The highly visual nature of multimedia

software—pictures, sign video inserts, graphics, animation, and captioning is particularly suited for students with hearing losses (Pollard, 1993; King, Noretsky, Larkins & Naumann, 1993).

This year Mantua Center is tasked with educating seventy severe to profoundly deaf children. These students range in ages from several months to thirteen years and represent twenty ethnic minorities and families who speak a primary language other than English.

Use of two-way interactive distance learning offers deaf children new options beyond pencil and paper for shared learning, exposing them to a broader base of educational and cultural opportunities. Our goal, as we provide visual access to learning for deaf students at Mantua Center, is to serve as a national demonstration site for developing ways to use technology for building literacy skills. Providing visual input for concepts increases understanding for all learners. This model would be adaptable for use in other special education and general education programs across Fairfax County, the state of Virginia, and the nation.

The Value Added by Videoconferencing:

The videoconferencing function is implemented through a Tandberg Educator 5000 system and ISDN lines dedicated to our Distance Learning Center. This system differs from more conventional instructional delivery methods (e.g., web-based videoconferencing) by providing full-motion compressed video. This is critical to educational situations where movements must be conveyed with precision.

Videoconferencing has proven to be an effective tool for student collaboration and it is an essential tool for achieving one of our primary educational goals: preparing students for the mobile and remote workplaces of the next century. Students engage in collaborative learning experiences with other students in Fairfax County, the nation, and around the world. We are currently working with Logical Transitions Incorporated, Tybee Island, Georgia to develop a series of videoconference tours for various grade levels that target specific Fairfax County Program of Studies and Virginia Standards of Learning. The tours span a range of topics. Among these are: Weather along the Southeastern United States, Civil War history of Savannah and Tybee Island, the Math and Science behind making Candy, and a Visit to the Dentist.

Last year, a sixth grade class of deaf students began conducting videoconferences with students from the Pennsylvania School for the Deaf and the Colorado School for the Deaf. This year we are building upon that success and connecting with additional schools in California, Indiana, and Wisconsin. The students are not only learning about other parts of the country and expanding their language skills, they are meeting deaf peers and broadening their scope of understanding about the world. Several students expressed astonishment that deaf programs exist in other parts of the United States.

Research has demonstrated that the process of teaching and learning in the classroom can become significantly richer for **all** when there is access to new information technologies and the assurance of effective, high quality technology training for teachers and administrators. Dr. Linda Roberts, Director of Educational Technology at the United States Department of Education speaks often of the major and rapid paradigm shift that is occurring in education. A shift that requires students in the Information Age to be challenged in new ways and if the curriculum is to be rewarding, it must be dynamic and meaningful. Our concept of using technology to connect components of the curriculum helps relate school-based studies to real-life experiences.

We are also bringing experts into the classrooms via videoconferencing technology. Two videoconferences were held last spring with a structural engineer at Parsons Brinckerhoff in New York City and our sixth graders who were involved in a mathematics unit on bridge building. Those sixth graders also enjoyed a videoconference with students in Northern Ireland involved in a bridge building activity. Activities such as these require careful analysis, preparation, and evaluation by the teachers involved ensuring that the two-way video and interactive medium adds value to the curriculum. In addition to the specific enrichment benefits of each project, we have observed that the prospect of a distance learning activity heightens enthusiasm, motivation, and zeal for learning, thus contributing to a more meaningful and effective school experience. The interactive component of distance learning is central to its effectiveness. The medium enables students to ask questions and share ideas with the instructor and others in what appears to students as a less threatening environment. Although research is needed to understand this phenomenon, it appears that the combination of adults and students participating in the discussion, and the impact of looking through a "big TV," heightens attention and interest levels. One benefit of this format is that as problems are posed and answered through dialogue, interpersonal communication skills are practiced and perfected.

Videoconferencing also provides benefits for professional development. The professional staffs of Mantua Elementary and Mantua Center have been utilizing two-way interactive distance learning to stay abreast of current research and applications within the field of education. Our objective is to establish a consortium to implement a model in which networked technology infrastructures and multimedia materials are used to research, identify, develop, evaluate, and disseminate innovative curricula and teaching strategies among K-6 classrooms. This model focuses on technology training and integration that not only improves classroom instruction, but extends learning beyond school walls. Among the strategies to be used in this endeavor are:

1) use of two-way interactive distance learning (IDL) subsystems to disseminate university level classes;
2) use of the network to facilitate teacher "sharing" and model technology classroom demonstration sessions;
3) on-site, customized staff development;
4) in-house training by peer practitioners;
5) workshop attendance and mini sabbaticals to develop new curricula and teaching methods incorporating IDL and other multimedia technologies;.

One of our first projects was a weekly graduate level class from James Madison University. The course enabled speech pathologists employed in the Northern Virginia area to take a mandatory course without having to drive several hours to and from class each week. In addition, the Distance Learning Center has provided cost-saving opportunities for professional conferences. For example, audiologists from Mantua and Fairfax County Public Schools held a videoconference with audiologists from Oakland County, Michigan to discuss recent innovations in the delivery of services to deaf and hearing-impaired clients. Last June, a graduate cohort sponsored by Fairfax County Public Schools Media Services Department attended a class titled *Distance Learning Technologies* presented by the Mantua Distance Learning Center Director, Sarah Skerker. We are beginning an ongoing dialogue about the utilization of information and communications technologies in the classroom with Ireland and other members of the Northeastern European Library Board (NEELB).

Mantua Center enjoys a partnership with Gallaudet University (funded by the Knight Foundation) that provides financial support to under represented populations such as deaf and

ethnic minorities to complete graduate studies to become teachers of the deaf. This partnership, Project ACHIEVE, involves a relationship among five schools: Maryland School for the Deaf, Pennsylvania School for the Deaf, Kendall Demonstration Elementary School, Model Secondary School for the Deaf, and Mantua Center. The interactive distance learning capability at our site promotes ongoing staff development through dialogue with these centers as well as through participation in graduate courses, videoconferencing, and workshops offered by Gallaudet University. The program, facilitated by our distance learning technology, minimizes much of the isolation that is so often experienced by educators of the deaf.

Very early in our transition to a technology-rich instructional environment, we realized that: (1) providing teachers with technology without training simply doesn't work; and, (2) if teachers are to become comfortable with technology, they must use it daily in a supportive environment. Training our professional staff is an imperative. Our professional development goal is that all teachers and professional staff will develop confidence and competence in the use of instructional tools and specific strategies for providing effective, quality learning in the interactive distance learning environment.

The Role of Closed-Circuit TV:

The Tandberg Educator 5000 is used in combination with a professional studio camera and audiovisual equipment to create a closed-circuit television studio. From the Distance Learning Center, students produce and broadcast a daily news show, *Good Morning Mantua*, which is viewed in every classroom via a dedicated closed-circuit channel. The program segments include news, interviews, important daily announcements, and the popular *Sign of the Day*.

The *Sign of the Day* helps the hearing community learn the basics of American Sign Language from members of the Mantua deaf population and interpreters. This segment has a substantive impact on building a strong school community. Hearing students use the signs they learn to communicate directly with their deaf classmates and hearing teachers have commented how the exposure to rudimentary signing has helped them appreciate the complexity of challenges faced by Deaf and Hard of Hearing in our society.

The *Good Morning Mantua* show provides the opportunity for students to learn about being a news anchor or a member of a TV tech crew. Students prepare scripts and props, conduct the

interviews, run the cameras and support equipment, operate the special effects generator and tape decks, monitor and select camera angles, and direct the broadcast. Students are trained in the various skills they need and then rotate for a week at a time to provide an opportunity for as many students as possible to participate in this activity.

The closed-circuit TV studio is also used in conjunction with the Distance Learning Center's interactive computer instruction capabilities to deliver internet-based and distance learning activities to other classrooms.

Video Production:

The Mantua Distance Learning Center includes modest capabilities for digital and analog video production. Video is a form of communication that takes into account visual, auditory, and kinesthetic learners' needs providing students with a popular and effective method of disseminating learned information. The video production capabilities are used to support group and individual projects.

A student team captured a second prize in a countywide video competition for their documentary on how to produce the *Good Morning Mantua* show. The students wrote the script, acted, produced and directed the documentary. The team then edited the video and prepared the final tape. Students have used the video production facilities to prepare videos of plays written as final products for literature circle activities. Others have used the production capabilities for storytelling performances. We are especially excited about the creation of videos designed to enhance language acquisition for our students who are deaf and non-English-speaking.

Digital video production has been used primarily to support staff presentations at national and international conferences. This year we will begin to use this capability to support student projects.

Interactive Computer Instruction:

The Distance Learning Center's rear-projection SMARTBoard maximizes classroom effectiveness by allowing teachers and/or students to run a variety of multimedia from a single

location on a large, easily visible, touch-sensitive screen. Key topics can be highlighted, notations can be made over computer images, and the entire body of work can be saved to a computer file then printed, emailed, or posted to a network. This electronic whiteboard is an effective tool for whole-group Internet, software application, and curriculum-based instruction.

Students have used the large visible screen of the SMARTBoard to advantage in conducting group research, preparing and giving group presentations.

Summary

Mantua Elementary and Mantua Center are committed to extending educational experiences beyond the classroom and to creating a distributed learning environment that allows all students and teachers to be active participants in the educational process. We believe strongly that technology is the key to equalizing educational opportunity, achieving excellence, and preparing effective citizens of the twenty-first century.

Japanese Education: A Comparative View

1. Turn on your computer, open your Web browser.
2. **Do you know how to evaluate Web materials?** (Group discussion)

3. With your partner, write your ideas in this box – it is only a draft, your ideas will grow: **Here are some ideas we talked about in class:** uniforms, schedule, school year, textbooks, technology, and public vs. private... what other topics?

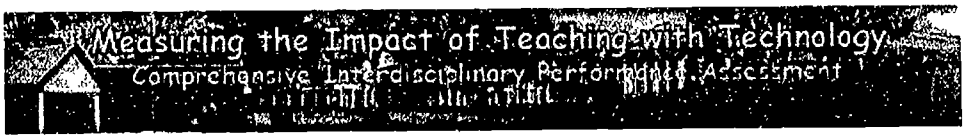
IDEA BOX....			
		In Japanese schools...	**In U.S. schools...**
Which Ideas or Questions do you Want to Pursue?			
Food...[For example]		[For example] Students bring lunch from home in an "obento" box, often made by their parents.	[For example] Students will buy food in the cafeteria, or sometimes bring it from home in a bag.

4. As you use search engines like Ask Jeeves and others, please experiment with different key words. How does a search using the term "Japanese classroom" compare with a search using the term "Japanese school"? (Write your answer on the back of this paper) .

5. **Treasure Hunt:** Please find an example of each of these.....(Check the box when you find it)

   - ❑ A government document written about Japanese education
   - ❑ A Japanese school Web page in English
   - ❑ A US school Web page (for comparison)
   - ❑ A site that describes the school day or year comparing to the US schedule
   - ❑ A dictionary or encyclopedia entry related to this project
   - ❑ Writing by a Japanese student, in English, online
   - ❑ A picture, online, of a Japanese classroom

6. Please get ready to draft a plan within your group by free writing in your journal.



Annotated Bibliography: Select Articles Regarding Learning, Performance Assessment & Educational Technology

By Laura Blasi ,
The University of Virginia,
Curry School of Education
Center for Technology and Teacher Education

August, 2000

Policymakers have been asking educators to demonstrate the impact of technology upon teaching and learning. Traditionally, this has been done using standardized test scores which measure student retention of subskills. As technology changes the way we teach and learn, we need to think of new ways to evaluate teaching and learning.

This bibliography was created in response to the question: "How can performance assessments be used to measure the impact of technology on learning?" It was written with practitioners in mind. While we turn to performance assessment when attempting to evaluate the impact of technology upon teaching and learning, we also need to ask if new tools will be needed to make this approach to evaluation feasible.

We offer a collection of resources – books and Websites – for practitioners specifically interested in implementing performance assessments while using educational technology. In the bibliography we summarize some of the findings and researcher recommendations made regarding performance assessment, conveying some of the findings and cautions in the current literature. We have not exhausted the literature, but instead have arranged key pieces thematically, moving from practice-based issues to policy-based issues.

While this was written with teachers in mind, the first half of this bibliography should also be of interest to instructional designers (including developers of software-based assessment and educational multimedia programs). The first eight citations outline learning strategies, explaining how they can be taught and how they can be evaluated in relation to developing technology-integrated performance assessment.

Problem-based learning, reflective problem solving, and learner self-regulation, can be used within performance assessment, while integrating technology into teaching and learning. Moving from technology in teaching to technology in assessment, Kelly-Benjamin (1995) and McNabb and Smith (1998) offer insights into ways technology could help teachers develop and record

performance assessments.

The second half of this bibliography offers insights into the more technical aspects of performance assessment. Linn (1994), Messick (1994), and Herman (1997) offer comprehensive overviews of performance assessment in relation to issues of validity and replicability. The authors emphasize the need for careful specification procedures,

multiple samples of student performance, and attention toward discriminant evidence toward establishing validity.

The need for developmental sensitivity is raised, as authors caution against basing the performance assessments upon the student goal of mimicking adult roles and capabilities. Authors also caution against teaching students to perform, urging cosmetic expertise at the expense of the development of habits of learning, which include taking risks, acknowledging limitations, mistakes, and areas of further development. Assessments structured around "tasks," instead of "constructs" (such as student comprehension), risk returning to behavioralistic educational approaches.

Several of the authors urge the documentation of unintended consequences stemming from the specific tasks, as processes and outcomes may vary from the construct the teacher is seeking to measure. Unintended consequences also need to be documented as they arise from the approach to assessment. A teacher using a writing prompt to indirectly measure student editing skills, for example, may begin to emphasize student practice with prompts, without teaching specific editing skills or the process of revision.

This bibliography takes a critical approach to performance assessment. Burdens felt by teachers and discomfort felt by parents are described by several of the authors. Performance assessment often calls for k-12 schools to compensate for the lack of training available for preservice teachers (in post-secondary education schools) regarding performance-related instructional methods and approaches to assessment.

In-service teachers, currently in the classroom, also work within conditions that can be adverse to performance assessments. Teachers using both standardized testing and performance assessments are often left to negotiate the potentially conflicting teaching methods and educational goals. Students are left to resolve the repercussions from the conflicts on their own. As teachers face a lack of available time, among other challenges, the k-12 school system stands to be held back by the mismatch between the norms of the U.S. teaching culture and the collaboration demanded by increasing use of performance assessment and portfolios. This mismatch will make it difficult to implement some of the approaches that increase reliability and generalizability described within this bibliography.

Within this bibliography, we have taken care to keep in mind that, as Baker and O'Neil (1996) have eloquently stated, "performance-based assessment is obviously grounded in a different instructional model, one for which the majority of teachers

of disadvantaged children may be unprepared" (p. 185). As teachers at Mantua Elementary seek to differentiate instruction and assessment, to meet the needs of all of their students, they do so with the intent of using technology to meet individual learner needs.

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Consequences without Evidence?: Performance Assessment and Validity

Messick, S. (1994). The interplay of evidence and consequences in the validation of performance assessments. *Educational Researcher*. 23(2), 13-23.

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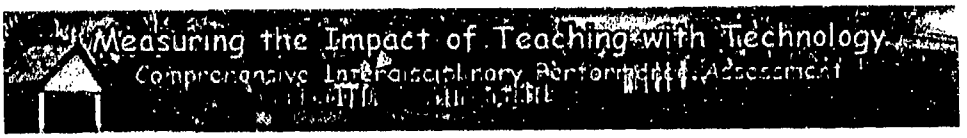

Measuring the Impact of Teaching with Technology: Brief Narrative and Video Clips (with Transcripts)

{video links will be uploaded shortly}

These five clips provide overview text regarding the use of technology for teaching and learning at Mantua Elementary School. The clips and questions can be used with teachers, preservice students, and by evaluators within small groups discussions. the clips allow the teachers and students to speak for themselves, and they allow you a glimpse into the classrooms.

The video links are embedded, but you may have to download a copy of real video player to view them. Because this technology is not always accessible, we are including transcripts of each clip at the bottom of each page. The site also includes a number of PDF-format documents.

Discussion Questions:

1. What other incentives are available for teachers as they become interested in incorporating technology into their teaching in meaningful ways?
2. What are other parental concerns and how do their concerns correspond to feedback gained through standardized testing?
3. After reviewing these clips, how would you evaluate the student process and performance?
4. Is it possible to teach and learn using technology, while thinking critically about technology?
5. From your experience, what are the positive and negative effects of technology on teaching and learning?

August, 2000

Teacher Inventory

This survey is being administered to faculty, pre-service, and in-service teachers, specialists, administrators, and interpreters, to create a collective snapshot of backgrounds, perceptions, and attitudes in U.S. education. The information you share here will be reported to the Department of Education, as they seek to understand the current conditions educators face. All responses will remain confidential, and individual responses will not be shared with others in your school, or within reports created from this survey.

Date: ___/ ___/ 2000 **School or site name:** _____

Location (city, state): _____
Last four digits of Social Security number: ___ ___ ___ ___

1. The following paragraphs describe an observation of Ms. Hill and of Mr. Jones. Please check the box that best answers each question for you.

Ms. Hill was leading her class in an animated way, asking questions that the students could answer quickly; based on the reading they had done the day before. After this review, Ms. Hill taught the class new material, again using simple questions to keep students attentive and listening to what she said.

Mr. Jones' class was also having a discussion, but many of the questions came from the students themselves. Though Mr. Jones could clarify students' questions and suggest where students could find relevant information, he couldn't really answer most of the questions himself.

	Definitely Ms. Hill's	Tend towards Ms. Hill's	Can't decide	Tend towards Mr. Jones	Definitely Mr. Jones
a. Which type of class discussion are you more comfortable having in class?.....	☐	☐	☐	☐	☐
b. Which type of discussion do you think most students prefer to have?.....	☐	☐	☐	☐	☐
c. From which type of class discussion do you think students gain more knowledge?.....	☐	☐	☐	☐	☐
d. From which type of class discussion do you think students gain more useful skills?	☐	☐	☐	☐	☐

2. Teachers have described very different teaching philosophies when interviewed by researchers. For each of the following pairs of statements, check the box that best shows how closely your own beliefs are to those in a given pair. The closer your beliefs are to a statement, the closer the box you check. Please ✓ only one for each set.

a. "I mainly see my role as a facilitator. I try to provide opportunities and resources for my students to discover or to construct concepts for themselves."	❑ ❑ ❑ ❑ ❑	"That's all nice, but students really won't learn a subject unless you go over the material in a structured way. It's my job to explain, to show students how to do the work, and to assign specific practice."
b. "The most important part of instruction is the content of the curriculum. That content is the community's judgment about what children need to be able to know and do."	❑ ❑ ❑ ❑ ❑	"The most important part of instruction is that it encourage 'sense-making,' or thinking among students. Content is secondary."
c. "It is useful for students to become familiar with many different ideas and skills even if their understanding, for now, is limited. Later, in college, perhaps, they will learn these things in more detail."	❑ ❑ ❑ ❑ ❑	"It is better for students to master a few complex ideas and skills well, and to learn what deep understanding is all about, even if the breadth of their knowledge is limited until they are older."
d. "It is critical for students to become interested in doing academic work – interest and effort are more important than the particular subject-matter they are working on."	❑ ❑ ❑ ❑ ❑	"While student motivation is certainly useful, it should not drive what students study. It is more important that students learn the history, science, math and language skills in their textbooks."
e. "It is a good idea to have all sorts of activities going on in the classroom. Some students might produce a scene from a play they read. Others might create a miniature version of the set. It's hard to get the logistics right, but the successes are so much more important than the failures."	❑ ❑ ❑ ❑ ❑	"It's more practical to give the whole class the same assignment, one that has clear directions, and one that can be done in short intervals that match students' attention spans and the daily class schedule."

3. Different cultures intersect within our schools – including different socio-economic backgrounds, different races, religions, and ethnicities. Read the following statements carefully, and please check the box closest to the statement that represents your experience within your school community where you are teaching. Please ✓ only one for each set.

There are limitations regarding access to technology for parents and children whose cultures are different from my own culture, in my local school community.	❑ ❑ ❑ ❑ ❑	Parents and children who are from my culture face greater challenges regarding technology access than those in other cultures, within my local school community.
There are deficits regarding the development of capabilities felt by parents and children whose cultures are different from my own culture, in my local school community.	❑ ❑ ❑ ❑ ❑	Parents and children who are from my culture face greater challenges regarding the development of capabilities than those in other cultures, within my local school community.

4. Within your school in the past 6 months have you discussed...

a. Why technology is being incorporated into your classroom? ❑ yes ❑ no
b. Why you are working with particular software/ hardware? ❑ yes ❑ no
c. Teaching in your content area (with or without technology)? ❑ yes ❑ no
d. How technology can be used to teach in your content area? ❑ yes ❑ no
e. Your colleagues' experiences using technology? ❑ yes ❑ no

5. How would you characterize yourself? (please choose only one)

❑ Risk-taker in regard to new technologies, eager to try
❑ Deliberative, but willing to try new technologies
❑ Skeptical and cautious regarding new technologies
❑ Suspicious of new technologies, unlikely to try them

6. Read the following statements carefully, and please check the box closest to the statement that represents your beliefs about teaching with technology. ✓ only one.

If I use technology it will determine what I teach and how I teach, because of the types of activities available and the location and set up of our computers.	❑ ❑ ❑ ❑ ❑	Technology is a tool that I use in the classroom or lab when it serves my lesson planning objectives. My goals determine how it will be used, and for which purposes.

7. Which best describes your use of computers in instruction? Choose one only.

- ❑ Computers are rarely to never used
- ❑ Computers are used occasionally, for some lessons during the semester
- ❑ Computers are used intensively, but only for certain lessons during the semester
- ❑ Computers are used throughout the semester, but not every class session
- ❑ Computers are used nearly every class session

8. A student in your classroom has trouble staying focused, and seems to need a lot of structure in order to complete an assignment. How would you use technology, while teaching this student who has also been identified as a "low achiever"? There are no "right" answers, but please explain your approach, whether or not you decide you could (and should) incorporate technology. (Feel free to use the back of this page...)

9. You have been asked to teach specific content to your students with technology – to demonstrate to an observer that technology can be used to teach in ways not possible in the "traditional" classroom. What would you do? There are no "right" answers, but please specify content, age and grade of students, and describe your approach. (Feel free to use the back of this page...)

10.

The Use of Technology in Classroom Instruction:

Please indicate how often you use technology for these purposes
(check only one box for each statement, using the key below)

	Purposes....	1	2	3	4	5
a.	Preparing word processed lesson plans					
b.	Using software, or spread sheets for grading					
c.	Developing lesson plans that use software					
d.	Accessing lesson plans from the Web					
e.	Accessing information from the Web					
f.	Accessing information from CD-ROMs					
g.	Communicating with others via listservs					
h.	Communicating with others via email					
i.	Communicating with others via videoconference					
j.	Developing individual or group presentations					
k.	Creating web-pages for instruction					
l.	Developing multi-media presentations					
m.	Developing lesson plans using spreadsheets and databases					
n.	Developing lessons that use technology tools such as the digital camera and scanner					
o.	Preparing lessons that use a display system (for example, a TV connected to computer).					
p.	Using software with students to prepare for standardized tests, to practice for taking them.					
q.	Using software that has students practice skills (such as choosing the correct word, or the solution to a math problem)					
r.	Using computer programs as tools for students to create with, such as Kid Pix or a drawing program.					

1 = never
2 = rarely (once or twice a term/ semester)
3 = occasionally (once or twice a month)
4 = frequently (every week)
5 = often (almost every day)

11.

Computer Training... Please indicate your experience with the following computer skills/applications. Formal training may include professional development workshops, Academy Classes, collegiate courses and professional conferences. Please select one choice for each category.

	Experience	1	2	3
a.	Word Processing Programs			
b.	Database Programs			
c.	Spreadsheet Programs			
d.	Graphics Programs			
e.	Telecommunications (Email, Internet, etc.)			
f.	Web Authoring (html)			
g.	Multimedia Programs (HyperStudio, KidPix)			
h.	How to integrate computers into existing lessons			
i.	How to organize activities to allow for computer use during class time			
j.	How to manage your class in a lab			
k.	How to use technology in a one-computer classroom			

1=Have Not Yet Learned 2=Learned on My Own 3= Learned with Formal Training

12.

I am able to do this.... The following statements list various activities. After each please indicate the extent to which you feel you are able to do these activities.

1=Definitely 2=Probably Could Do This 3=Unsure 4=I Don't Think So 5=Not Able

	Activities	1	2	3	4	5
a.	Selecting technology resources for my students					
b.	Implementing technology resources for my students					
c.	Incorporating the Web into instruction					
d.	Incorporating E-mail into instruction					
e.	Incorporating videoconferencing in instruction					
f.	Developing computer-based classroom presentations					
g.	Using e-mail and the Internet with individuals or small groups					
h.	Using computers in many settings (in classroom, lab, etc.)					
i.	Teaching students select/ use technology appropriate to task					
j.	Teaching search strategies for Internet and CD-ROMs					
k.	Teaching students to use electronic encyclopedias					
l.	Teaching students to manage information using spreadsheets and/or databases					
m.	Teaching students using GIS (Geographic Information Systems)					
n.	Teaching students using the graphing calculator					
o.	Teaching students using a VCR					
p.	Teaching students using an overhead projector (OHP)					

13.

Obstacles to Technology Integration...

Rank the following obstacles according to your experiences.

1= obstacle that least inhibits my use of technology
5= obstacle that most inhibits my use of technology

		1	2	3	4	5
a.	Lack of knowledge about computers and computer software					
b.	Lack of expectations for classroom use by school leaders					
c.	Lack of training					
d.	Lack of time to change practice					
e.	Lack of access to technology resources					

(you should have only one ✓ in each numbered column)

Other obstacles:

14. Methods Matrix: What is Your Level of Confidence/ Experience?

Please check 4 two boxes
(one for confidence, one for experience) for each method listed.

1=I am very confident that I could do this
2=I am somewhat confident
3=I am not at all confident

1=I have a lot of experience
2=I have some experience
3=I don't know what this is

	Confidence				Experience		
	1	2	3	Methods...	1	2	3
a				Lecture, formal/ informal			
b				Lecture, commentary (on an article, etc.)			
c				Cooperative learning (i.e. jigsaw, STAD)			
d				Collaborative learning			
e				Group problem-solving (i.e. think-pair-share)			
f				Peer teaching			

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	Confidence				Experience		
	1	2	3		1	2	3
g				Modeling cognitive processes (DRTA, KWL, think-alouds)			
h				Simulation/ role play			
i				Problem-based/ inquiry-based learning			
j				Student presentations (speaking)			
k				Synthesis/ analysis			
l				Advance organizer			
m				Question and answer (diagnostic, developmental, informational)			
n				Learning sets/ Objectives (Hunter)			
o				Word maps/ concept mapping			
p				Recitation			
q				Drill (preparatory, review, remedial)			
r				Cloz passage, fill-in-the-blank			
s				Scavenger Hunts			
t				Word Problems			
u				True/ False, Matching, Multiple choice			
v				Worksheets			
w				Manipulatives (blocks, models)			
x				Study (independent, supervised)			
y				Listing, grouping, and labelling (Taba)			
z				Guided Practice/ Independent Practice			
aa				Teams-Games-Tournaments (TGT)			
bb				Demonstration			
cc				Effective data display			
dd				Discussion (interactive, introductory, clarification, summary)			
ee				Listening (active, deliberate, empathetic)			
ff				Decision-making models			
gg				Map and globe use			

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	Confidence				Experience		
	1	2	3		1	2	3
hh				Concept formation			
ii				Primary source use			
jj				Biography production			
kk				Using children's trade books			
ll				Field trips			
mm				Community/ local resources			
nn				Laboratory experiments			
oo				Hypothesizing			
pp				Data Gathering			
qq				Generalization			
rr				Journaling			
ss				Research Paper			
tt				Debate			
uu				Use of activity "centers"/ learning stations			
vv				"Free" time			
ww				Portfolio development			
xx				Workshop			
yy				Visualization			

15. Methods and Technologies Matrix: Which Work Best Together?

Teaching Methods		Word processing	VCR	OHP	T.V.	E-mail	Web research	Online archives	Drill/ Task Software (e.g. Reader Rabbit)	"Tool" Software (e.g. Geometer Sketch Pad)	"Living Books"	Presentation (e.g., Power Point)	Spread sheets	Database	Video conferencing	Video (filming, editing)	CD-ROMs	Multimedia programs (e.g., Hyperstudio)	Handheld technology (graphing calculator)	GIS (Geographic Information Systems)
After skimming through all of the teaching methods listed in the left column, please write numbers beneath the technologies indicating your use of the technology, while using the method (respond even if you are in a non-classroom teaching position now, as, for example, a specialist). 1 = always use it 2 = sometimes 3 = rarely 4 = never 0 = not applicable																				
a	Lecture, formal/ informal																			
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x x	Workshop																			
y y	Visualization																			

Survey created by Blasi (blasi@virginia.edu) and Heinecke (heinecke@virginia.edu)

17. Please check √ the scenario that best fits your own perspective at this time (Please only check one)		
a. Sarah Cohen is familiar with the technology currently being used in her classroom and in the lab, but she has found an alternative approach to using technology that she wants to explore further.		
b. Focused on collaborating, Fred Roy has been sharing lesson plans and ideas gathered from conferences, while cooperating with his colleagues in terms of scheduling and the use of technology resources.		
c. Scrutinizing the effects of information technologies (IT) on her students, Maria Suarez focuses on her students' outcomes, as well as their performance in class, and the competencies they attain.		
d. Most important to Bill Kitano are issues related to organizing his lessons using technology, and managing the class, while he seeks the most efficient and effective use of information and resources.		
e. With partial confidence, Demario Sava uses technology when there are few conflicts with his own priorities. He drops technology aside to help his students prepare for tests. Status of IT among administrators and incentives for teachers influence how often he uses technology.		
f. Interested in using technology in her lessons, Sue Delmonico has heard about how her colleagues use the lab, and she would like to know more about how a computer could fit into her current lessons.		
g. Absorbed by his role on a budget committee, while adopting a new text book, Ted Blade has not turned his attention to the use of technology in his classroom.		

18. Concerns I have regarding the use of technology in my classroom....		
(Please rank the four following statements from 1-4, with 1= the most important)		
a. Right now I have concerns that have little or nothing to do with technology; there are several matters in and/or outside of school that require all of my attention.		
b. I am concerned with increasing my own understanding of how to use technology. I am influenced by how the use is perceived by others in the school. At this point in time, technology is something I may or may not use while teaching.		
c. Specific tasks using technology concern me – I choose these tasks mindful of the use technology as it fits in my schedule and with my teaching goals.		
d. The impact of technology on teaching & learning is a concern for me; my concern focuses on benefits felt by the school community and/or on changes seen within my own students.		

19. Considering the 1999 - 2000 school year please rank the role, if any, the following people played in your use of technology in your classroom:

If you are a new teacher, check "yes" and move on to the next question. Yes, these people did not play any role for me, I am a new teacher at Mantua.....	❑ Yes

	Please place numbers from 1-3 next to each person's name, with 1 = the response they would most likely have; or mark the last column (had no role) and move to the next person.			
	I want to respond to your needs, and make sure you have the supplies and anything else you need. My goals were developed from district-level priorities.	I will initiate new staff development practices or policies. I am encouraging when you are less involved or have little energy. I have long range goals in mind.	I keep our activities flowing, managing over a length of time. I often solve problems as needed. I am often planning for instructional needs, and I am sensitive to the needs of teachers.	This person had no role in my use of technology.
a. Ellen Schoetzau				
b. Jay McClain				
c. Jan-Marie Fernandez				
d. Elizabeth Lertora				
e. Sarah Skerker				
f. Pat Small				
g. Kathy Bressner				
h. Jill Rodriguez				

20. Which racial/ ethnic group(s) do you identify with? (Please check as many as apply)

❑ African-American ❑ Asian-American ❑ Caucasian/ White ❑ Hispanic or Latino/a
❑ Native American/ Pacific Islander ❑ Other, please specify _____

21. Gender ❑ Female ❑ Male

22. What is your age?
❑ 20-30 ❑ 31-40 ❑ 41-50 ❑ 51-60 ❑61-70 ❑ 71+

23. Current Teaching Status:

- ❑ Pre-service teacher (with prior classroom experience)
- ❑ Pre-service teacher (without prior classroom experience)
- ❑ Currently a classroom teacher (uncertified)
- ❑ Currently a classroom teacher (certified)
- ❑ Instructional assistant
- ❑ Administrator
- ❑ Interpreter
- ❑ Specialist (PE, Music, Art,...) Specialty: _____
- ❑ Specialist (Itinerant) Specialty: _____

Only answer the following question if you checked "Currently a classroom teacher" (within question 23). If you are not currently a teacher, please skip to question 25.

24. a. How many years have you been in your current position?
❑ 0-2 ❑ 3-5 ❑ 6-10 ❑ 11-15 ❑ 16 or more

b. What grade do you teach?
❑ K ❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6
❑ 7 ❑ 8 ❑ 9 ❑ 10 ❑ 11 ❑ 12
❑ Computer Lab (across grades)
❑ Resource teacher (across grades)
❑ Other_____

c. Have you worked with a preservice teacher before? ❑ Yes ❑ No

d. If yes, what was your experience like, overall? ❑ Positive ❑ Neutral ❑ Negative

e. How many years have you been a K-12 teacher?
❑ 0-2 ❑ 3-5 ❑ 6-10 ❑ 11-15 ❑16 or more

25. Most recently completed educational degree...

❑ BA/BS ❑ MA/ MS ❑ Five year degree (combined BA/MA)
❑ Ph D ❑ Ed D ❑ Other (specify) _____

All responses are confidential. Thank you for participating in this survey.